

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. APPLN. NO. 09/598,896
ATTORNEY DOCKET NO. Q59609

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

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1. (*Currently Amended*) A method ~~Method~~ for multiple access in a radiocommunication radio communication system that employs time division multiple access (TDMA) techniques, such that a ~~signalling~~ signaling multiframe is used[[,]] in both transmission directions[[,]] for interchanging ~~signalling~~ signaling messages between at least one fixed unit (~~11-j~~) and a set of remote units (~~12-1 to 12-m~~) located within the coverage area associated with said fixed unit (~~11-j~~); ~~characterised, wherein~~ in that the signaling said-signalling multiframe is formed by a predetermined number of virtual identities for ~~signalling~~ signaling which are generated by a first controller means[[-(11-j),]] included in ~~said~~ the fixed unit (~~11-j~~), ~~for the purpose of interchanging signalling messages so that the number of said virtual identities is less than the number of said remote units (12-1 to 12-m)~~ such that the first controller means increases or/and decreases the predetermined number of virtual identities for signaling based on the level of occupancy of the signaling multiframe.

2. (*Currently Amended*) The method for multiple access according to claim 1, ~~characterised in that said virtual identities are independent of the true identities of said~~being the number of the virtual identities less than the number of the remote units (12-1 to 12-m) and are broadcast by a first radio transmitter (112), included in said fixed unit (11-j), over a pilot channel in the downlink transmission direction.

3. (*Currently Amended*) The method~~Method~~ for multiple access according to claim 2, ~~characterised in that said pilot channel is received by means of a second radio receiver (123), included in a remote unit (12-i), being fed to a second controller means (121) for recording the predetermined number of virtual identities for signalling~~being the virtual identities independent of the true identities of the remote units and are broadcast by a first radio transmitter included in the fixed unit (11-j), over a pilot channel in the downlink transmission direction.

4. (*Currently Amended*) The method~~Method~~ for multiple access according to claim 3, being the pilot channel received by means of a second radio receiver included in a remote unit being fed to a second controller means for recording the predetermined number of virtual identities for signaling,~~characterised in that a virtual identity is selected by said second controller means (121) when said remote unit (12-i) wishes to transmit a signalling message via a second radio transmitter (122), for which purpose it inserts the signalling message into the virtual identity selected and it is received in a first radio receiver (113), included in said fixed unit (11-j).~~

5. (*Currently Amended*) ~~The method~~Method for multiple access according to claim 4, being a virtual identity selected by the second controller means when the remote unit wishes to transmit a signaling message via a second radio transmitter, for which purpose it inserts the signaling message into the virtual identity selected and it is received in a first radio receiver included in said fixed unit, ~~characterised in that said signalling multiframe received in said first radio receiver (113) is supplied to said first controller means (111) in order that said selected virtual identity be marked as occupied and thereafter is broadcast by means of said pilot channel.~~

6. (*Currently Amended*) ~~The method~~Method for multiple access according to claim 5, receiving the signaling multiframe in the first radio receiver by means of the first controller means in order that the selected virtual identity be marked as occupied and thereafter is broadcast by means of said pilot channel. ~~1, characterised in that said signalling multiframe is formed by a maximum number of virtual identities for signalling that is a function of the maximum duration permissible for said signalling multiframe.~~

7. (*Currently Amended*) ~~The method~~Method for multiple access according to claim 1, being the signaling multiframe formed by a maximum number of virtual identities for signaling that is a function of the maximum duration permissible for said signaling multiframe. ~~claim 6, characterised in that the number of virtual identities for signalling generated by said first controller means (111) is a function of the level of occupancy of said signalling multiframe.~~

8. (*Currently Amended*) A system ~~System~~ for multiple access in a ~~radio communication~~ radio communication system which comprises at least one fixed unit ~~(11-j)~~ having an associated coverage area within which is located a set of remote units ~~(12-1 to 12-m)~~, such that they employ time division multiple access ~~(TDMA)~~ techniques to establish communications, so that they interchange ~~signallings~~ signaling messages by means of a ~~signallings~~ signaling multiframe that is used in both transmission directions, wherein; ~~characterised in that the said fixed unit (11-j) comprises a first controller means (111) for increasing or/and decreasing the generating a predetermined number of virtual identities for signallings~~ signaling based on the level of occupancy of the, ~~these being grouped in said signallings~~ signaling multiframe, ~~so that the number of said virtual identities is less than the number of said remote units (12-1 to 12-m).~~

9. (*Currently Amended*) The system ~~System~~ for multiple access according to claim 8, being the number of the virtual identities is less than the number of the remote units, ~~characterised in that said fixed unit (11-j) comprises a first radio transmitter (112) for broadcasting said virtual identities over a pilot channel in the downlink direction of the transmission, such that said virtual identities are independent of the true identities of said remote units (12-1 to 12-m).~~

10. (*Currently Amended*) ~~The system~~System for multiple access according to claim 9, comprising the fixed unit a first radio transmitter for broadcasting the virtual identities over a pilot channel in the downlink direction of the transmission, such that the virtual identities are independent of the true identities of said remote units, characterised in that said remote unit (12-i) comprises a second radio receiver (123) for receiving said pilot channel, that is supplied to a second controller means (121) for recording the predetermined number of virtual identities for signalling.

11. (*Currently Amended*) ~~The system~~System for multiple access according to claim 10, comprising the remote unit a second radio receiver for receiving said pilot channel, that is supplied to a second controller means for recording the predetermined number of virtual identities for signaling, characterised, in that said second controller means (121) is adapted for selecting a virtual identity when said remote unit (12-i) wishes to transmit a signalling message so as to insert the signalling message inside the virtual identity selected, so as to be transmitted by a second radio transmitter (122) so that a first radio receiver (113), included in said fixed unit (11-j), receives said signalling message.

12. (*Currently Amended*) The system ~~System~~ for multiple access according to claim 11, being the second controller means adapted for selecting a virtual identity when the remote unit wishes to transmit a signaling message so as to insert the signaling message inside the virtual identity selected, so as to be transmitted by a second radio transmitter so that a first radio receiver included in the fixed unit receives the signaling message. ~~characterised in that said first radio receiver (113) is adapted for supplying said first controller means (111) with said signalling multiframe, in order that said selected virtual identity is marked as occupied and thereafter is broadcast over said pilot channel.~~

13. (*Currently Amended*) The system ~~System~~ for multiple access according to claim 12, being the first radio receiver adapted for supplying the first controller means with the signaling multiframe, in order that the selected virtual identity is marked as occupied and thereafter is broadcast over the pilot channel. ~~8, characterised in that said first controller means (111) is adapted for generating a number of virtual identities for signalling as a function of the level of occupancy of said signalling multiframe, so that there is a maximum number of virtual identities for signalling which is a function of the maximum duration permissible for said signalling multiframe.~~

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14. *(New)* A system for multiple access according to claim 8, wherein said first controller means is adapted for generating a number of virtual identities for signaling as a function of the level of occupancy of said signaling multiframe, so that there is a maximum number of virtual identities for signaling which is a function of the maximum duration permissible for said signaling multiframe.

BZ 15. *(New)* A fixed unit according any claim 8, comprising a first controller means for increasing or/and decreasing the predetermined number of virtual identities for signaling based on the level of occupancy of the signaling multiframe.

16. *(New)* A remote unit according to claim 8, comprising a second radio receiver for receiving the pilot channel, that is supplied to a second controller means for recording the predetermined number of virtual identities for signaling.

17. *(New)* A remote unit according to claim 16, choosing a virtual identities for signaling of the received inside the pilot channel.